

**Notice of Allowability**

Application No.

10/766,904

Examiner

Juanita D. Stephens

Applicant(s)

YAMAMOTO ET AL.

Art Unit

2853

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Election filed 2/6/2005.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>4/6/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Species A, readable on claims 1, 2, 6, 7, and 8 in the reply filed on 2/6/2006 is acknowledged. Claims 3-4 and 9-11 are hereby rejoined.

### ***Allowable Subject Matter***

2. Claims 1-11 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The prior art does not disclose, suggest or render obvious the combination of a droplet ejecting head having a viscosity of 20 mPa.sec so as to evolve a bubble, wherein a distance between said thermal energy applying surface and a foremost end of the ejection nozzle from which the droplet is ejected is in a range of from 2um to 8 um. This invention solves the problem of providing a ejecting head that is less costly, no more complicated in structure than the conventional inkjet head and which allows a fluid of high viscosity to be ejected in droplets with high efficiency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art of Shinozuka et al. (US 5,750,592) discloses an ink for use in ink jet recording where the viscosity of the ink is preferably 25 mPa.sec or less to ensure stable ejection of ink, **but does not disclose** wherein a distance between said thermal energy applying surface and a foremost end of the ejection nozzle from which the droplet is ejected is in a range of from 2um to 8 um.

The prior art of Hayashi et al. (US 5,753,016) discloses ink excellent in reproduction of black color for use in ink jet recording having a viscosity of preferably 1.2 to 20 mPa.sec, **but does not disclose** wherein a distance between said thermal energy applying surface and a foremost end of the ejection nozzle from which the droplet is ejected is in a range of from 2um to 8 um.

The prior art of Murakami (US 6,443,561 B1) a liquid discharge head (Figs. 18 and 28) which show the relationship between the distance L from the liquid contact surface on the electrothermal transducing element to the discharge port surface, wherein this distance is set at 34 um or less, preferably 16 um or more, **but does not disclose** the liquid discharge head having a viscosity of 20 mPa.sec so as to evolve a bubble, wherein a distance between said thermal energy applying surface and a foremost end of the ejection nozzle from which the droplet is ejected is in a range of from 2um to 8 um.

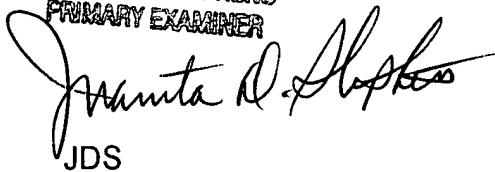
#### **Contact Information**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JUANITA D. STEPHENS  
PRIMARY EXAMINER



JDS  
March 3, 2006

Juanita D. Stephens  
Primary Examiner  
Art Unit 2853